

Serial No.: 10/806,102
Atty. Docket No.: P68924US0

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application.

LISTING OF CLAIMS:

1. (Currently Amended) A pepper harvester comprising an operator controlled vehicular structure capable of ~~self propulsion~~ movement along rows of pepper plants having mature pods thereon, said vehicular structure including a forwardly extending header with generally parallel row picking units mounted thereon, each picking unit comprising a plurality of generally parallel picking bars moving in an orbital path ~~in a hay raking motion,~~ a rotatable support member connected to each of the forward and rearward ends of said picking bars, a plurality of picking fingers extending laterally from one side of each of said picking bars, said picking bars being oriented with ~~the~~ a leading end lower ~~then~~ than a trailing ~~end~~ with end, each of ~~the~~ said bars being moved longitudinally during rotation of the rotatable support members a distance equal to the diameter of the rotational movement of each end of the picker bars to move the picking fingers an increment of vertical and longitudinal movement during each cycle of orbital movement, said picking fingers on ~~said~~ opposed picking bars being disposed in opposed relation to enter a pepper plant from opposite sides at a low elevation, ~~the tip ends~~ each of said opposed picking

fingers ~~being~~ terminating in tip ends that are laterally spaced from each other and generally in laterally aligned relation when moving upwardly in relation to pepper plants as the picking units move forwardly thereby enabling the pepper plant and branches to be pulled through the space between the picking fingers to remove pepper pods from the pepper plants, the orbital movement of the picking bars and picking fingers and the rotational speed of the rotatable support members being such that the picking fingers move vertically in relation to the pepper plants as the picking fingers move in an orbital path in relation to the pepper plants.

2. (Original) The harvester as claimed in claim 1 wherein said rotatable support members are lightweight circular disks, each of said picking bars being of hollow rigid construction and each of said picking fingers being of tapered resilient construction.

3. (Original) The harvester as claimed in claim 1 wherein said rotatable support members are driven by a hydraulic motor that is safely stopped if the harvester becomes jammed.

4. (Currently Amended) The harvester as claimed in claim 1 wherein said picking fingers, said picking bars and rotatable support members include upper surfaces that are inclined upwardly toward said pepper plants to form ~~an~~ a laterally inclined supporting path of movement for peppers removed from the pepper plants.

5. (Currently Amended) ~~The harvester as claimed in claim 4 wherein~~ A pepper harvester comprising an operator controlled

Serial No.: 10/806,102
Atty. Docket No.: P68924US0

vehicular structure capable of movement along rows of pepper plants having mature pods thereon, said vehicular structure including a forwardly extending header with generally parallel row picking units mounted thereon, each picking unit comprising a plurality of generally parallel picking bars moving in an orbital path a rotatable support member connected to the forward and rearward ends of said picking bars, a plurality of picking fingers extending laterally from one side of each of said picking bars, said picking bars being oriented with a leading end lower than a trailing end, each of said bars being moved an increment of vertical and longitudinal movement during each cycle of orbital movement, said picking fingers on opposed picking bars being disposed in opposed relation to enter a pepper plant from opposite sides at a low elevation, each of said opposed picking fingers terminating in tip ends that are laterally spaced from each other and generally in laterally aligned relation when moving upwardly in relation to pepper plants as the picking units move forwardly thereby enabling the pepper plant and branches to be pulled through the space between the picking fingers to remove pepper pods from the pepper plants, the orbital movement of the picking bars and picking fingers and the rotational speed of the rotatable support members being such that the picking fingers move vertically in relation to the pepper plants as the picking fingers move in an orbital path in relation to the pepper plants;

Serial No.: 10/806,102
Atty. Docket No.: P68924US0

said picking fingers, said picking bars and rotatable support members including upper surfaces that are inclined upwardly toward said pepper plants to form a laterally inclined supporting path of movement for peppers removed from the pepper plants; and

each picking unit ~~includes~~ including a flat ~~conveying~~ conveyor surface laterally of said picking bars to receive removed peppers from said inclined supporting path of movement ~~defined by said picking fingers for peppers removed from the pepper plants,~~ and a chain conveyor adjacent said flat conveyor surface, said chain conveyor ~~including a plurality of paddles and fingers thereon and being~~ moveable along said flat conveyor surface to move peppers ~~and any leaves or branches~~ removed from pepper plants rearwardly on said flat conveyor surface.

6. (Currently Amended) The harvester as claimed in claim 5 wherein said flat conveyor surface includes an upwardly inclined surface at its rearward end, a transverse conveyor in communication with the rearward end of the flat conveyor surface for receiving peppers moved rearwardly by said ~~paddles~~ chain conveyor and transporting peppers transversely of said header.

7. (Original) The harvester as claimed in claim 6 wherein said vehicular structure includes an upwardly extending elevator receiving peppers from said transverse conveyor and discharging them through an air separator onto a sorting conveyor, said air separator including a source of moving air to remove plant leaves and stems as

Serial No.: 10/806,102
Atty. Docket No.: P68924US0

peppers pass through the moving air onto said sorting conveyor, a sorting station alongside said sorting conveyor to enable sorting personnel to manually remove residual plant leaves and stems, and a loading conveyor receiving cleaned peppers from said sorting conveyor to load peppers into a collection area.

8. (Currently Amended) The harvester as claimed in claim 1 wherein each said picking unit includes forwardly extending, outwardly inclined guides spaced laterally from each other to provide an unobstructed access of pepper plants to said opposed picking fingers, said picking fingers on said picking bars ~~are~~ being inclined upwardly to convey peppers picked from pepper plants transversely of said picking bars and fingers into a longitudinal conveying structure alongside said picking unit to convey peppers to a rearward portion of said header.

9. (Canceled)

10. (Currently Amended) A harvester for removing pod-like products from plants comprising a powered, operator controlled vehicle, a header supported from said vehicle and extending forwardly ~~thereof~~ therefrom, spaced picking means mounted on said header, said picking means comprising longitudinally spaced apart rotatably driven support members, a plurality of elongated picking bars eccentrically connected to and extending between said rotatable support members, a plurality of spaced fingers secured to said bars and projecting laterally therefrom, said bars being inclined

Serial No.: 10/806,102
Atty. Docket No.: P68924US0

longitudinally with a forward end positioned lower than a rearward end such that said fingers on said bars move towards each other and simultaneously move upwardly when moving to the rear so as to engage said pod-like products and separate them from the plants on which they grow, said bars, fingers thereon and rotatable support members being parallel and inclined upwardly and toward said plants to move said bars and fingers thereon in an orbital vertical and laterally inclined path for moving said products laterally of said picking means and onto conveyor means conveying said pod-like products away from said picking means.

11. (Currently Amended) The harvester as claimed in claim 10 wherein said ~~disks are connected by a~~ plurality of picking bars are eccentrically connected to said ~~disks~~ support members such that the bars are moved in an orbital path with a portion of the path being closer to the plants being picked when the bars are moving toward the rear of the header.

12. (Original) The harvester as claimed in claim 11 wherein said picking bars are moved rearwardly and upwardly when opposed bars and fingers are moved rearwardly with the rearward movement of the picking bars and picking fingers thereon moving a distance equal to the diameter of the rotational movement of the connection between the ends of the picking bars and the rotatable support members.

13. The harvester as claimed in claim 11 wherein each picking bar includes an increment of longitudinal movement and lateral

Serial No.: 10/806,102
Atty. Docket No.: P68924US0

inward and outward movement equal to the diameter of rotational movement of the connections between the ends of the picking bars and the rotatable support members.

14. (Currently Amended) The harvester as claimed in claim 13 wherein said rotatable support members are lightweight disks, said picking bars are tubular structural members of rigid construction and said picking fingers being transversely and upwardly inclined toward said plants at an angle such that pod-like products will roll from one picking bar to adjacent generally parallel picking bars onto said conveyor means as the picking bars oscillate in their orbital path of movement.

15. (Currently Amended) A method of harvesting peppers from pepper plants comprising the steps of providing picking fingers disposed on opposite sides of a row of plants, moving said fingers in an orbital path in a manner such that said fingers move cyclically upwardly and downwardly, toward and away from each other and forwardly and rearwardly to engage said peppers and separate them from said plants, the fingers on opposite sides of said plants being mounted on ~~an~~ elongated picker bar bars each having a plurality of said fingers secured thereto, a pair of rotatable support members connected to the ends of each picking bar with the ends of the picking bar being eccentrically connected to said support members, said picking bars and rotatable support members being inclined upwardly and outwardly to move the picking bars and

Serial No.: 10/806,102
Atty. Docket No.: P68924US0

fingers toward the plant and simultaneously move said picking fingers upwardly and then move said picking fingers away from the plant and then simultaneously move away from the plant and downwardly and inclining downwardly and outwardly to pick peppers from the plants and transfer them laterally and downwardly onto a longitudinal conveying means to convey the peppers to a cleaner assembly.

16. (Currently Amended) A picking unit for harvesting pod products from row plants comprising at least one pair of parallel picking bars oriented on opposite sides of a row of plants, a driven rotatable support member at each end of each picking bar, each picking bar including forward and rearward ends connected to said support members in equally spaced relation to an axis of rotation of each rotatable support member to move said picking bars in an orbital path on opposite sides of a row of plants, a plurality of laterally extending picking fingers on each picking bar such that said fingers on each bar move cyclically toward and away from ~~and longitudinally in relation to~~ a row of plants, said rotatable support members at rearward ends of said picking bars being located above said rotatable support members at forward ends of said bars such that said picking fingers move vertically upwardly during cyclical longitudinal movement thereof when said picking fingers have been moved toward each other and toward a row of plants to extend under pod products on a row of plants ~~thereby~~ and moving

Serial No.: 10/806,102
Atty. Docket No.: P68924US0

said fingers vertically to engage and move pod products upwardly and separate the pod products from the plants in a row as the picking unit is moved longitudinally along a row of plants, said picking fingers on said opposed picking bars having opposed tip ends in transverse alignment and laterally spaced apart to enable passage of plant stems in a row of plants to pass ~~therebetween~~ between said tip ends and adjacent surfaces of said picking fingers during upward and longitudinal movement of said picking fingers when said picking bars and picking fingers are moving in that part of said orbital path in closest opposed relation to remove pod products from a row of plants by moving opposed picking fingers upwardly through the plants.

17. (Currently Amended) The picking unit as claimed in claim 16 wherein said picking fingers, said picking bars and said rotatable support members incline upwardly towards said plants and toward said tip ends of the fingers thereof to provide an inclined support for pods removed from a row of plants for moving said pods laterally toward a conveying structure parallel to and below said picking bars and the tip ends of said fingers that are moving forwardly said opposed picking bars for discharge into a conveyor structure.

18. (Original) The picking unit as claimed in claim 17 wherein said picking bars are inclined longitudinally.

Serial No.: 10/806,102
Atty. Docket No.: P68924US0

19. (Original) The picking unit as claimed in claim 17 wherein said picking fingers, picking bars and rotatable support members are inclined laterally about 10 to 15.